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AUTHOR	Stafford, Kenneth R.
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ABSTRACT

This study is one of a series on cognitive behavior related to lingual types among Navaho children. The present work has aimed at gaining additional descriptive data regarding the effects of lingual types (compound bilinguals, Egnlish-speaking monolinguals, and Navaho-speaking monolinguals) on school achievement as measured by the Metropolitan Achievement Tests. Additionally, information was gained about (1) IQ score discrepancies resulting from the use of different types of tests, (2) the best predictors of school success, and (3) the effects of early English instruction. The following recommendations were made: (1) suitable, specific instruction in English should be provided Navaho children unfamiliar with the English language and culture preliminary to other school instruction; (2) in evaluating intelligence and learning ability of these children, measures should be used which motivate and accurately reflect ability or potential achievement; and (3) a curriculum for the early school years should be developed which incorporates the Navaho culture and heritage and involves wide use of Navaho teachers. The study includes some 14 tables for the presentation of statistical data and a list of references. For report of Phase 1, see ED 044 702. (Author/SK)

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FINAL REPORT

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TYPES OF BILINGUALISM AND PERFORMANCE OF NAVAHO CHILDREN IN SCHOOL, PHASE II

Kenneth R. Stafford, Professor
Department of Educational Psychology
Arizona State University
Tempe, Arizona 85281

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Summary

This study is one of a series of studies of cognitive behavior related to lingual types among Navaho children. The present work was aimed at gaining additional descriptive data regarding the effects of lingual types (compound bilinguals, English-speaking monolinguals, and Navaho-speaking monolinguals) on school achievement as measured by the Metropolitan Readiness Test and the Metropolitan Achievement Tests. Additionally, information was gained about (1) IQ score discrepancies resulting from the use of different types of tests; (2) the best predictors of school success; and (3) the effects of early English instruction.

The study was a longitudinal one extending over three years, ranging from kindergarten through the second grade. Subjects were Navaho children attending the Ft. Defiance-Window Rock schools in northern Arizona.

Achievement differences were found initially among the lingual types, favoring the ones most familiar with the English language. These differences tended to diminish with time spent in school, however. The specific study of English during the kindergarten year had a positive effect on the achievement of Navaho-speaking and bilingual children. Vast differences in scores from these groups--potentially misleading--were found between culturally biased and less biased intelligence test results. Instruments predictive of school success for the various lingual classifications were determined.

The following recommendations were made: (1) Suitable, specific instruction in English should be provided Navaho children unfamiliar with the English language and culture preliminary to other school instruction. (2) In evaluating intelligence and learning ability of these children, measures should be used which motivate and accurately reflect ability or potential achievement. (3) A curriculum for the early school years should be developed which incorporates the Navaho culture and heritage and involves the wide use of Navaho teachers.

Problems Under Consideration

As greater concern for the welfare of minority groups has developed during the past few years, interest in linguistic skills, their development, and their effects on behavior has increased significantly. The importance of this interest has been reflected by the writings of such individuals as Weinreich (e.g., 1953), Ervin and Osgood (e.g., 1954), and Lambert and Jakobovits (e.g., 1960) who noted effects of what Osgood called "compound" and "coordinate" bilingualism on aspects of cognitive behavior. Even English dialects have been viewed as foreign languages (Bernstein, 1961) which may be just as inappropriate for success in middle- and upper-class schools. Perhaps one of the best current indices of the interest in problems related to teaching English as a second language is provided by the activities of the Center for Applied Linguistics in Washington, D.C., from which a running index of research just completed and in progress is periodically published.

The present study is one of a series which began with a study of problem-solving behavior as a function of proficiency in English among Navaho children (Stafford, 1966). The series continued with a study of the effects of lingual types (i.e., monolingual, compound-coordinate bilinguals) on problem-solving behavior (Stafford, 1968), and one dealing with meaning differences for these lingual types as measured by the semantic differential (Stafford & Van Keuren, 1968). Since provocative differences in problem solving and meaning responses were found to be related to lingual types in these studies, another one was proposed to investigate the effects of these various language backgrounds on in-school achievement. This resulted in a two-phase sequence (Stafford, 1970, Phase I; the present one, Phase II).

Three questions were framed for this investigation:
(1) Will there be differences among Navaho children in performance in school subjects as a function of lingual types?
(2) What will be the effects of special instruction in English

on school achievement? (3) Will there be worthwhile, lasting effects of special instruction in English on school achievement?

As the study progressed, additional data were collected which resulted in findings regarding intelligence testing of Navaho children, predictor measures of school performance, and the equalizing or leveling effects of school attendance on lingual types.

Method

The following Navaho groups from the Window Rock-Ft. Defiance schools were selected: kindergarten Navaho-speaking monolinguals, kindergarten compound bilinguals (Navaho-English), kindergarten Navaho-speaking monolinguals who received special instruction in English, first-grade Navaho-speaking monolinguals, first-grade English-speaking monolinguals, and first-grade compound bilinguals. Male and female subjects were approximately equally distributed among all groups.

Lingual types were determined by a questionnaire given to teachers who knew and questioned pupils about their linguistic status. Two measures of intelligence were obtained for members of the kindergarten groups by means of the Columbia Mental Maturity Test and the Peabody Picture Vocabulary Test. Kindergarten children were also given the Metropolitan Readiness Tests. The Metropolitan Achievement Tests were used as measures of school achievement at the first and second grade levels. Longitudinal data were collected for the original kindergarten groups over a three-year period (kindergarten, first grade, and second grade).

Results

The Experimental Questions

In addressing the first question (differences among lingual types), tests of differences were made at the end of each of the three years of Phase I and Phase II.

End of first year. When total scores on the Metropolitan Readiness Test for compound bilingual and monolingual kindergarten groups were compared, a difference significant at the .025 level favoring the compound bilinguals was found (Appendix, Table 2). At the first-grade level, scores on the four subtests of the Metropolitan Achievement Tests were compared for English-speaking monolinguals, compound bilinguals, and Navaho-speaking monolinguals. Scores on all four subtests favored the English-speaking monolinguals over the compound bilinguals; differences in two instances (Word Knowledge and Reading) were significant at the .05 level. Compound bilinguals scored higher on all four subtests than the Navaho-speaking monolinguals ($p = .001$ to .10). Differences between English-speaking and Navaho-speaking monolinguals were significant for every subtest ($p = .001$ to .005), favoring the former. Complete results for these first-grade groups are shown in Table 3 of the Appendix.

End of the second year. At the end of the first grade, the original kindergarten groups of Navaho-speaking monolinguals and compound bilinguals were compared. No significant differences were found for any of the four subtests of the Metropolitan Achievement Tests (Appendix, Table 4). At the end of the second grade, the original first-grade groups (English-speaking monolinguals, compound bilinguals, and Navaho-speaking monolinguals) were compared. No significant differences were found for any of the subtests of the Metropolitan (Appendix, Table 5).

End of the third year. Significant differences were found between the original kindergarten Navaho-speaking

monolinguals and compound bilinguals in two of the five subtests at the end of the second grade. The compounds excelled the original Navaho-speaking groups in Word Discrimination ($p = .056$) and Arithmetic Concepts and Skills ($p = .041$). This is shown in Table 6 in the Appendix. Data for the original first-grade group were not available at this time of testing.

Data to answer the second question (effects of special instruction in English) were available only at the end of the kindergarten year for the first year of the study. Due to loss of subjects by attrition and the subsequent hopeless mixture of pupils who did and did not have special instruction in English, comparisons could not be made for the remaining years. For the first year, however, those Navaho-speaking monolinguals who received special instruction in English achieved significantly better scores than those who did not on Listening ($p = .05$), Numbers ($p = .001$), and Total Score ($p = .05$) of the Metropolitan Readiness Test (Appendix, Table 7). When Navaho-speaking monolinguals who received special instruction in English were compared with compound bilinguals who received none, no significant differences were found (Appendix, Table 8). In contrast to this finding, when Navaho-speaking monolinguals and compound bilinguals, neither of whom received special instruction in English, were compared, compounds scored significantly better on Listening ($p = .01$), Alphabet ($p = .01$), and Total Score ($p = .025$)--even though in this comparison the monolinguals were significantly older ($p = .05$). Results are shown in Table 2 of the Appendix.

As stated above, because of loss from attrition and unresolvable organizational difficulties, the third question about lasting effects of English instruction could not be directly answered. However, differences in achievement test scores appear to diminish for English-speaking monolinguals, compound bilinguals, and originally Navaho-speaking monolinguals, especially for the latter two groups (Appendix, Tables 3, 5, and 6). It would seem that the mere exposure for a period of time to English and Anglo culture exerts an equalizing effect.

Additional Questions

In the course of this study, scores on two types of individually administered intelligence tests were obtained for kindergarten Navaho-speaking monolinguals and compound bilinguals. The Peabody Picture Vocabulary Test and the Columbia Mental Maturity Test were given by a school psychologist using pantomime directions. Both tests were given to a total of 18 kindergarten pupils, nine Navaho-speaking monolinguals and nine compound bilinguals. As is shown by Table 1, there were no practical deviations from normal IQ scores when the Columbia was used. However, when the Peabody was used, a difference was found between the Navaho-speaking and the compounds ($t = 2.68$, $df = 16$, $p < .05$), favoring the compounds. In every category shown in Table 1, there are marked practical differences between scores on the Peabody and the Columbia--i.e., Peabody scores are drastically below the mean for the test, while Columbia scores fall within the normal limits.

TABLE 1

Intelligence Test Means and Standard Deviations for Kindergarten Navaho Children After the First Year of the Study

	Total Groups (N=18)		Navaho-Speaking Monolinguals (N=9)		Compound Bilinguals (N=9)	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Peabody IQ's	40.6	13.2	33.4	12.8	47.7	9.7
CMMT IQ's	93.9	6.8	91.5	7.1	96.3	5.9

Another ancillary question was investigated: Which tests or combination of tests provide the best predictors of school success in the first and second grades (as determined by Metropolitan scores) for the several lingual types? Multiple correlations were computed for the Peabody, Columbia, and the Metropolitan Readiness Test as predictor variables and the first- and second-grade Metropolitan Achievement Tests as criterion variables. The best predictors of first-grade achievement for all bi- and monolinguals were: Readiness, the best single predictor (R = .39); Readiness plus the Peabody provided the best combination of indicators (R = .51). For compound bilinguals: Readiness (R = .51); Readiness plus the Peabody (R = .652); Readiness, the Peabody, and Columbia (R = .854). For Navaho monolinguals: the Columbia (R = .475); the Columbia plus Readiness (R = .59); the Columbia, Readiness, and the Peabody (R = .61). The best predictors of second-grade achievement for all bi- and monolinguals were: Readiness (R = .50); Readiness and the Peabody (R = .55); addition of the Columbia made no improvement. For compound bilinguals: Readiness (R = .55); Readiness and the Columbia (R = .59); additions (Columbia and first-grade achievement) made no improvement. For Navaho monolinguals: Readiness (R = .47); Readiness plus the Peabody (R = .61); additional predictors (Columbia and first-grade achievement) made no improvement.

These findings are summarized in Tables 9 through 14 in the Appendix.

Conclusions and Recommendations

In viewing the findings related to question number one, it is no surprise to find differences among the lingual types since the criterion measures are in English and loaded with Anglo cultural factors. Nor is it surprising to find that continued exposure to Anglo school settings tends to exert equalizing effects on performance on conventional school tests--even though subtle differences, both cognitive (e.g.,

Stafford, 1968; Lambert & Jakobovits, 1960) and affective (Stafford & Van Keuren, 1968), have been detected among lingual types with more sensitive, less biased measuring techniques.

Examination of data collected in connection with question number two reveals marked differences between Navaho-speaking monolinguals given special instruction in English and those who had none. Even the typical differences between Navaho-speaking monolinguals and Navaho compound bilinguals disappeared after one year of English instruction during the kindergarten year. There is no obvious reason why this salutary effect should not last at least through the first few years of school, making these frequently unpleasant years less traumatic. Perhaps one of the most important aspects of this whole question about teaching English as a second language is related to the development of effective strategies for doing this task. It is believed by the writer that affective-cultural factors, as well as cognitive ones, should be included in any instructional strategy for Navaho children.

It is unfortunate that question number three could not be specifically answered. But in studies like this one, there is always some uncertainty about the continued availability of data. However, in view of the findings summarized under question one, instruction in English should contribute to diminishing the differences among lingual types.

Findings related to the ancillary questions are of more practical interest than are those related to the three original ones. In view of the almost cavalier practices of some test administrators when confronted with the problem of suitable placement of non-WASP children, these findings are of special importance. Amazingly there are instances of "school psychologists" making decisions from results of culturally loaded tests like the Stanford-Binet which have led to the placement of non-Anglo children in classes for the mentally retarded. Table 1 summarizes the great differences in IQ scores obtained when a culturally biased test (the Peabody) is compared with one which is patently less biased (the Columbia). All groups tested with the Peabody would be wrongly

judged to be intellectually retarded. In sharp contrast, the Columbia yielded scores considered to be within the normal intelligence range. It is very clear in light of these results that to evaluate a Navaho pre-school child with a WASP test is sheer folly. Even to develop norms for Navaho children with such tests is highly questionable, for it is very probable that there are factor loadings which do not adequately reflect the intellectual characteristics of the Navaho. Ideally, tests of intelligence and achievement for Navahos should be composed of items based on their culture and/or items which are culture free.

In predicting probability of success in the first and second grades of an Anglo-oriented school, scores on Anglo-oriented tests usually are better than those from tests not directly related to school work since both Anglo-oriented measures are proportionately low. This finding--which is certainly no surprise--does not justify the continued use of Anglo tests and curricula in schools for Navaho pupils, however. For those children who are not at all familiar with white, American culture or language (e.g., Navaho-speaking monolinguals), a culture fair intelligence test appears to be the best predictor of success in the first grade. As Navaho children gain experience in Anglo curriculum schools, the best predictors of later school success are readiness, achievement, and culturally loaded intelligence tests--even though these scores tend to be misleadingly low.

In view of these several findings, it seems defensible to recommend that suitable English instruction be provided Navaho-speaking and bilingual children during at least the first year in school. Effective ways of teaching English to these children should be carefully designed and gently presented. In evaluating the intelligence and learning ability of Navaho pupils in the early grades, items which motivate and accurately reflect ability and achievement should be devised and used. Finally, a curriculum for the early school years should be developed which incorporates the Navaho culture and heritage and involves the wide use of Navaho teachers.

It is believed that in so doing these things, the drastic transition from the deeply ingrained Navaho culture to our very different Anglo-Saxon culture will be facilitated, while allowing for a growth in pride of Navaho traditions among Navaho children.

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APPENDIX

TABLE 2

Analysis of Variance for Kindergarten Navaho-Speaking Monolinguals (Group 1) and Compound Bilinguals (Group 2) Neither of Which Received Special Instruction in English (End of Kindergarten Year)

Variable	Means	SS	df	MS	F	p
IQ	(1) 85.93 (2) 87.64	(T) 3114.71 (G) 20.57 (E) 3094.14	27 1 26	 20.57 119.01	 .17	not sig.
Word Meaning	(1) 5.07 (2) 6.14	(T) 152.68 (G) 8.04 (E) 144.64	27 1 26	 8.04 5.56	 1.44	not sig.
Listening	(1) 6.71 (2) 9.07	(T) 158.68 (G) 38.89 (E) 119.79	27 1 26	 38.89 4.61	 8.44	.01
Matching	(1) 10.15 (2) 9.29	(T) 275.63 (G) 5.08 (E) 270.55	26 1 25	 5.08 10.82	 .47	not sig.
Alphabet	(1) 6.07 (2) 10.36	(T) 516.71 (G) 128.57 (E) 388.14	27 1 26	 128.57 14.93	 8.61	.01
Numbers	(1) 7.62 (2) 8.71	(T) 158.07 (G) 8.14 (E) 149.93	26 1 25	 8.14 6.00	 1.35	not sig.
Copying	(1) 9.57 (2) 9.86	(T) 225.71 (G) .57 (E) 225.14	27 1 26	 .57 8.66	 .006	not sig.
Total	(1) 43.93 (2) 53.21	(T) 3276.86 (G) 603.57 (E) 2673.29	27 1 26	 603.57 102.82	 5.87	.025
Chronological Age	(1) 73.71 (2) 69.64	(T) 668.11 (G) 116.04 (E) 552.07	27 1 26	 116.04 21.23	 5.46	.05

TABLE 3

Comparisons of First-Grade Groups Using Sheffé's Test
(End of First-Grade Year)

Variable	Comparison	Means	SD	df	F'Value	p
Word Knowledge	Nav. M.	34.64	7.27			
	vs.			1,146	26.02	.001
	Eng. M.	45.02	10.04			
	Nav. M.	34.64	7.27			
	vs.			1,146	12.53	.001
	Compound	41.06	9.12			
	Eng. M.	45.02	10.04			
	vs.			1,146	4.98	.05
	Compound	41.06	9.12			
Word Discrimination	Nav. M.	37.64	6.77			
	vs.			1,147	11.53	.001
	Eng. M.	44.35	10.07			
	Nav. M.	37.64	6.77			
	vs.			1,147	8.22	.005
	Compound	42.73	9.01			
	Eng. M.	44.35	10.07			
	vs.			1,147	0.87	not sig.
	Compound	42.73	9.01			
Reading	Nav. M.	33.97	5.30			
	vs.			1,143	20.46	.001
	Eng. M.	43.19	8.77			
	Nav. M.	33.97	5.30			
	vs.			1,143	7.84	.01
	Compound	39.81	6.91			
	Eng. M.	43.19	8.77			
	vs.			1,143	5.40	.05
	Compound	39.81	6.91			
Arithmetic	Nav. M.	40.17	5.95			
	vs.			1,147	10.70	.005
	Eng. M.	45.33	5.96			
	Nav. M.	40.17	5.95			
	vs.			1,147	3.66	.10
	Compound	41.88	7.81			
	Eng. M.	45.33	5.96			
	vs.			1,147	3.24	.10
	Compound	41.88	7.81			

TABLE 4

Analysis of Variance for Original Kindergarten Groups of Compound Bilinguals (1) and Navaho-Speaking Monolinguals (2) at the End of First Grade

Variable	Means	MS	df	F	p
Word Knowledge	(1) 40.37 (2) 39.13	(T) 62.75 (G) 13.42 (E) 64.25	34 1 33	0.209	NS
Word Discrimination	(1) 42.05 (2) 39.44	(T) 88.18 (G) 59.40 (E) 89.06	34 1 33	0.667	NS
Reading	(1) 38.84 (2) 36.31	(T) 45.57 (G) 55.58 (E) 45.27	34 1 33	1.228	NS
Arithmetic Concepts & Skills	(1) 43.47 (2) 42.25	(T) 50.73 (G) 13.01 (E) 51.87	34 1 33	0.251	NS

TABLE 5

Analysis of Variance for Original First-Grade Groups of Compound Bilinguals (1), Navaho-Speaking Monolinguals (2), and English-Speaking Monolinguals at the End of the Second Grade

Variable	Means	MS	df	F	p
Word Knowledge	(1) 43.64 (2) 40.40 (3) 45.71	(T) 65.88 (G) 102.10 (E) 65.02	86 2 84	1.570	NS
Word Discrimination	(1) 46.04 (2) 38.60 (3) 47.38	(T) 98.06 (G) 287.78 (E) 93.55	86 2 84	3.076	NS
Reading	(1) 44.36 (2) 44.30 (3) 47.21	(T) 46.96 (G) 71.05 (E) 46.38	86 2	1.532	NS
Spelling	(1) 45.25 (2) 41.10 (3) 48.96	(T) 118.17 (G) 288.30 (E) 115.31	86 2 84	2.067	NS
Arithmetic Concepts & Problem Solving	(1) 43.38 (2) 39.50 (3) 44.63	(T) 67.46 (G) 93.40 (E) 66.84	86 2	1.397	NS
Arithmetic Computation	(1) 49.81 (2) 43.10 (3) 48.67	(T) 119.23 (G) 189.52 (E) 117.55	86 2 84	1.612	NS
Arithmetic Total	(1) 45.72 (2) 40.00 (3) 45.83	(T) 72.83 (G) 146.59 (E) 71.07	86 2	2.063	NS

TABLE 6

Analysis of Variance for Original Kindergarten Compound Bilinguals and Navaho Monolinguals by Variables Shown at End of Second Grade

Variable	SS	df	MS	F	p
Word Knowledge	(G) 113.798 (E) 2092.526	1 35	113.798 59.786	1.903	NS
Word Discrimination	(G) 551.617 (E) 5046.058	1 35	551.617 144.173	3.826	.056*
Reading	(G) 161.149 (E) 2868.526	1 35	161.149 81.958	1.966	NS
Spelling	(G) 367.001 (E) 4916.243	1 35	367.001 140.464	2.613	NS
Arithmetic Concepts & Skills	(G) 325.339 (E) 2602.769	1 35	325.339 74.365	4.375	.041*

*Compound bilinguals > Navaho monolinguals.

TABLE 7

Analysis of Variance for Navaho-Speaking Monolinguals
Who Received Special Instruction in English
(Group 1) and Those Who Did Not (Group 2)
(End of Kindergarten Year)

Variable	Means	SS	df	MS	F	p
IQ	(1) 86.64 (2) 85.93	(T) 2993.71 (G) 3.57 (E) 2990.14	27 1 16	3.57	.003	not sig.
Word Meaning	(1) 6.00 (2) 5.07	(T) 112.96 (G) 6.04 (E) 106.93	27 1 26	6.04 4.11	1.47	not sig.
Listening	(1) 8.71 (2) 6.71	(T) 171.71 (G) 28.00 (E) 143.71	27 1 26	28.00 5.53	5.07	.05
Matching	(1) 8.71 (2) 10.15	(T) 218.52 (G) 13.97 (E) 204.55	26 1 25	13.97 8.18	1.71	not sig.
Alphabet	(1) 7.71 (2) 6.07	(T) 372.68 (G) 18.89 (E) 353.79	27 1 26	18.89 13.61	1.39	not sig.
Numbers	(1) 10.50 (2) 7.62	(T) 130.67 (G) 56.09 (E) 74.58	26 1 25	56.09 2.98	18.80	.001
Copying	(1) 9.79 (2) 9.57	(T) 252.11 (G) .32 (E) 251.79	27 1 26	.32 9.68	.003	not sig.
Total	(1) 51.43 (2) 43.93	(T) 2336.11 (G) 393.75 (E) 1942.36	27 1 26	393.75 74.71	5.27	.05
Chronological Age	(1) 70.71 (2) 73.71	(T) 942.71 (G) 63.00 (E) 879.71	27 1 26	63.00 33.84	1.86	not sig.

TABLE 8

Analysis of Variance for Navaho-Speaking Monolinguals Who Received Special Instruction in English (Group 1) and Compound Bilinguals Who Did Not (Group 2) (End of Kindergarten Year)

Variable	Means	SS	df	MS	F	p
IQ	(1) 86.64 (2) 87.64	(T) 2677.43 (G) 7.00 (E) 2670.48	27 1 26	7.00 102.70	.07	not sig.
Word Meaning	(1) 6.00 (2) 6.14	(T) 137.86 (G) .14 (E) 137.71	27 1 26	5.30	.02	not sig.
Listening	(1) 8.71 (2) 9.07	(T) 122.68 (G) .89 (E) 121.79	27 1 26	.89 4.68	.19	not sig.
Matching	(1) 8.71 (2) 9.29	(T) 314.00 (G) 2.29 (E) 311.71	27 1 26	2.29 11.99	.19	not sig.
Alphabet	(1) 7.71 (2) 10.36	(T) 208.96 (G) 48.89 (E) 360.07	27 1 26	48.89 13.85	3.53	.10
Numbers	(1) 10.50 (2) 8.71	(T) 176.68 (G) 22.32 (E) 154.36	27 1 26	5.94	3.76	.10
Copying	(1) 9.79 (2) 9.86	(T) 182.11 (G) .04 (E) 182.07	27 1 26	.04 7.00	.005	not sig.
Total	(1) 51.43 (2) 53.21	(T) 3416.11 (G) 22.32 (E) 3393.79	27 1 26	22.32 130.53	.17	not sig.
Chronological Age	(1) 70.71 (2) 69.64	(T) 634.11 (G) 8.04 (E) 627.07	27 1 26	8.04 24.08	.33	not sig.

TABLE 9

Best Predictors of First-Grade Achievement
for All Navaho Bi- and Monolinguals
(N = 34)

Order	Variance	R
Readiness	.16	.39
Readiness + Peabody	.26	.51
Readiness + Peabody + Columbia	.26	.51

TABLE 10

Best Predictors of First-Grade Achievement
for Navaho Compound Bilinguals
(N = 16)

Order	Variance	R
Readiness	.27	.51
Readiness + Peabody	.42	.65
Readiness + Peabody + Columbia	.73	.85

TABLE 11

Best Predictors of First-Grade Achievement
for Navaho-Speaking Monolinguals
(N = 17)

Order	Variance	R
Columbia	.23	.475
Columbia + Readiness	.304	.59
Columbia + Readiness + Peabody	.306	.61

TABLE 12

Best Predictors of Second-Grade Achievement
for All Navaho Bi- and Monolinguals
(N = 27)

Order	Variance	R
Readiness	.25	.50
Readiness + Peabody	.30	.55
Readiness + Peabody + First-Grade Achievement	.31	.55
Readiness + Peabody + First-Grade Achievement + Columbia	.31	.55

TABLE 13

Best Predictors of Second-Grade Achievement
for Navaho Compound Bilinguals
(N = 17)

Order	Variance	R
Readiness	.309	.55
Readiness + Columbia	.353	.593
Readiness + Columbia + Peabody	.354	.594
Readiness + Columbia + Peabody + First-Grade Achievement	.355	.596

TABLE 14

Best Predictors of Second-Grade Achievement
for Navaho-Speaking Monolinguals
(N = 18)

Order	Variance	R
Readiness	.219	.47
Readiness + Peabody	.368	.61
Readiness + Peabody + Columbia	.404	.63
Readiness + Peabody + Columbia + First-Grade Achievement	.421	.64